

CLAIMS

1. Pump (1), such as a vacuum pump or compressor, with
at least one pump piston (2, 3) moving on a
5 circular path and a pump housing (18), the pump
piston (2, 3), optionally coupled in a rigid manner
to one or more further pump pistons (2, 3), moving
in an oscillating manner about an axis of rotation
(5) on a path of movement correspondingly having
10 two reversal positions, and furthermore a medium,
optionally compressed or pressurized, being
discharged via an outlet valve (8) and, in the
course of movement from one reversal position into
the other reversal position, an inlet valve (9)
15 being opened, after which, in the course of a
pressure buildup, the medium is discharged on a
pressure side of the pump piston (2, 3) then
obtained and taken in on a suction side of the pump
piston (2, 3) then obtained.
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2. Pump according to Claim 1 or in particular
according thereto, characterized in that the inlet
valve (9) is run over in the movement from one
reversal position into the other reversal position.
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3. Pump according to one or more of the preceding
claims or in particular according thereto,
characterized in that the pump chamber is formed
radially on the inside by an inner wall formed
30 rotationally fixed with respect to the pump piston.
4. Pump according to one or more of the preceding
claims or in particular according thereto,
characterized in that the housing outer wall
35 bounding the pump chamber radially on the outside
is formed in a fixed manner.

5. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the housing outer wall bounding the pump chamber radially on the outside is movable.
6. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the inlet valve (9) is formed in the pump chamber floor and/or in the pump chamber ceiling and/or in the housing outer wall and/or in the housing dividing wall.
7. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the pump chamber is bounded in the direction of movement of the pump piston (2, 3) by a fixed housing dividing wall.
8. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the outlet valve (8) is formed as a check valve.
9. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the outlet valve (8) is formed in the housing dividing wall and/or in the pump chamber floor and/or in the pump chamber ceiling and/or in the housing outer wall.
10. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the pump is driven by an electric motor.

11. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the pump is driven by a stepping motor.
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12. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the pump is given by an electromagnetic oscillating part.
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13. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the drive is performed by means of a crankshaft.
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14. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the drive acts on two or more pumps linked by means of the same crankshaft.
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15. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that, in the case of two pumps (1) driven by means of the same crankshaft, they move
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- in opposite directions.
16. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the inlet valve (9) and the
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- outlet valve (8) are associated with the same end region of the path of movement.
17. Pump according to one or more of the preceding claims or in particular according thereto,
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- characterized in that the inlet valve (9) and the outlet valve (8) are disposed in the same housing dividing wall (6, 7).

18. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the inlet valve (9) and/or the outlet valve (8) is formed from a punched or bent sheet-metal part, with a closure plate (27) associated with a valve opening (21, 22) and an adjoining bending-out portion (28).
19. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the closure plate merges with the bending-out portion (28) with the same diameter.
20. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the inlet valve (9) and/or the outlet valve (8) have closure plates (27) and bending-out portions (28) merging with each other in a coplanar manner.
21. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that an inlet valve (9) and/or an outlet valve (8) has a mounting foot (29), which is mounted in a clamping manner.
22. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the mounting foot (29) merges with the bending-out portion (28) in a coplanar manner.
23. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the closure plate (27) rests

on a support (31), which is mounted in a clamping manner between the valve and the associated housing part.

- 5 24. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the mounting in a clamping manner is achieved by means of a clamping part (37).
- 10 25. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the mounting in a clamping manner is achieved by means of a pressure part (35).
- 15 26. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the longitudinal extent of the inlet valve (9) and/or of the outlet valve (8) runs parallel to the axis of rotation (5) of the pump pistons (2, 3).
- 20 27. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that a number of outlet valves (8) are disposed next to one another parallel to the direction of rotation (5).
- 25 28. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the pump piston (2, 3) has associated with the outlet valve (8) an opening projection (40), for the triggering of the outlet valve (8).
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29. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the opening projection, protruding toward a corresponding end face of the pump piston (2, 3), is formed as a push rod.
30. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that a pump (1) has four - or a higher multiple of two - pump pistons (2, 3), of which two or more respectively move on a common circular path.
31. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that two pump pistons (2, 3) moving on a common circular path are respectively disposed in a separate pump housing (18).
32. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that a common drive is provided for the four pump pistons (2, 3) and in that the drive is disposed in a drive housing (44) separate from the pump housing (18).
33. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that the drive housing (44) is disposed between the pump housings (18).
34. Pump according to one or more of the preceding claims or in particular according thereto, characterized in that, in the case of a number of pump housings (18), the pump housings (18) are identically formed such that they can be exchanged for each other.

35. Pump according to one or more of the preceding
claims or in particular according thereto,
characterized in that the pump piston (2, 3) and/or
5 the pump housing (18) is coated in the surface area
of an associated movement gap.

36. Pump according to one or more of the preceding
claims or in particular according thereto,
10 characterized in that the coating is a flocking.